Examiners' Report
Principal Examiner Feedback

June 2023

Pearson Edexcel Awards
In Number and Measure (ANM20)
Paper 2A

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Edexcel Award in Number and Measure (ANM20)
Principal Examiner Feedback – Level 2

General Comments

Overall candidates made better attempts at questions in this series and appeared to be well prepared for the examination.

There were far fewer attempts that resembled trial and improvement approaches, but the inclusion of any working out to support answers remains an issue for some. Candidates also need to be reminded about how they write their numbers. There were examples where numbers were written ambiguously (eg 1s and 7s, 2s and 5s) or numbers over-written, leaving them illegible. But a significant issue in this series was the misreading and miswriting of numbers. On many occasions candidates miscopied numbers from the question, or even their own figures.

Section A is designed to be completed with the aid of a calculator, but the sight of some non-calculator methods would suggest that not all candidates had a calculator. For example, this was apparent in questions 3 and 8 where long multiplication methods were seen.
There were some instances in this paper where working out was set out in a disorganised way that making it difficult to identify a chosen route of solution by the candidate in order to award method marks. Questions 9, 11, 15, and 18 in Section A required several different stages or working. In Section B, question 7 was frequently done using partitioning methods. That said, there was an improvement this series in the way that candidates set out their work.

Candidates need to be reminded to read what form the answer is to be presented in; if an answer is not simplified when asked for, the final mark will be lost. There were a few occasions where several methods were shown by a candidate; unless made clear by the candidate which is to be accepted for marking, no marks can be given.

It was encouraging to find that most candidates attempted nearly every question, in both sections.

Reports on Individual Questions

Question 1

There were many correct answers to this question. The most common error in either part was mis-counting the divisions whilst in part (b) it was not uncommon to find candidates counting the wrong way, for example giving answers such as 46.4.

Question 2

When errors were made in this question, these errors were normally associated with the choice of the wrong sign, though times table errors again caused problems for some in part (b). Although the drawing of number lines might have assisted candidates, there was no evidence of this method being used.

Question 3

Many candidates obtained the correct answer. The only error appeared to be when candidates rounded or truncated a figure (unnecessarily) on their calculator, or mis-copied the number. A significant number of students attempted this question using long multiplication methods, suggesting they did not have a calculator.

Question 4

The most common error was in just multiplying the three numbers given. The division by 2 was not well understood, with many failing to do the division by 2. Common incorrect answers therefore included 12960 or 432. A small number of candidates showed some confusion between perimeter and area.

Question 5

A minority incorrectly chose to multiply rather than divide, but having chosen to divide, then most of the candidates went on to give the correct answer.

Question 6

This was a well answered question. Part (a) was done best, with many correct answers, though some just doubled. In part (c) a few added or multiplied the indexed numbers or used 10 or 15. Some left the answer as 100 without finding the square root. There was some evidence that candidates failed to understand how to use their calculator or were using a calculator without a square root facility. Those without calculators were unable to access this question.

Question 7

There was some confusion between adding and multiplying the given figures, and some who used 28803. But this was usually well answered. There were some trial and improvement methods but they did not have to perform many trials before arriving at the answer 9. Many candidates failed to give any units with their numerical answer, thereby losing a mark.

Question 8

A small number of candidates divided by 18 in an attempt to find the percentage. Otherwise, many understood to multiply by 18 and divide by 100. Many used non-calculator partitioning methods, finding 10% and 1%, but then had difficulty in working out 120+12×8. Essentially non-calculator partitioning methods were far less successful than those who simply used a method equivalent to ×0.18.

Question 9

A minority showed evidence of transcription errors in working. Although this was a long question it was usually very well done, with evidence of sound arithmetic in most cases. A minority of candidates got the operation wrong, by adding on the tax or by disregarding it completely.

Question 10

It was not uncommon to see candidates mixing operations, that is dividing by 8 and/or multiplying by 5. Some just performed one operation. Those who knew that a division by 5 and a multiplication by 8 were needed usually ended up with the correct answer.

Question 11

There was the common confusion of candidates over whether to use 7 or 14 in any circle formula, and a minority of candidates who tried to use the formula for working out the area of a circle, but this was less common than in previous series. Common errors included a failure to divide by 2 to find the perimeter of the semicircle rather than the whole circle, and a significant number failed to add on the length of the base of 14 as the final step.

Question 12

The majority of candidates attempted this by a traditional approach, writing these as improper fractions. Candidates that lost marks tried to do this using only 3/5 and 1/2. A significant minority did 3/5 × 2/1 to get 0 marks. There was no requirement to simplify fractions after processing. Of those candidates who changed the fractions into decimals to use a calculator, most then went on to give the correct answer.

Question 13

Candidates who could not work with percentages were unable to make much progress with this question. Sometimes, in trying to work out the percentage, the division by 100 was not done. Fewer candidates than in previous series attempted this question using compound interest methods, but there remained some confusion as to whether to give their interest as the final answer, or whether to add their answer back onto the 800. Many used a partitioning method to find the percentage by attempting to find 1% and 0.5% rather than a more direct approach, usually leading to greater error. It was not uncommon to find candidates who used this approach finding 10%, 1% and then not knowing how to get to 1.5%.

Question 14

This question was quite well answered. Though the majority found the sum of their products, it was not uncommon to see errors due to an addition of the values in the first or second columns of the table.

Question 15

For many candidates the only mark gained was for working out 17 × 20. Unfortunately, the majority failed to progress any further due to much misunderstanding about working out the area of the circle. Many could not recall the correct method; others guessed a variety of formula including $2\times\pi\times8$, $\pi2\times8$, and $(\pi\times8)2$, some using the diameter rather than the radius. Some candidates incorrectly added the areas, rather than finding the difference. Overall, this question was not answered accurately.

Question 16

There were many attempts using multiples, which gained no marks. The most successful attempts were those who listed factors, frequently arriving at the correct answer. Some used spider diagrams to assist in this process. But most common were factor trees which gained some credit for showing the prime factors, but many using this method did not know how to use their prime factors to arrive at the final answer; the same was the case for those candidates who used a Venn diagram.

Question 17

Most gained some credit for the first step of showing 1288 but could not then convert this to a percentage of 5600. Some incorrectly attempted to write this as a percentage of 6888.

Question 18

Many candidates showed understanding of rectangular area by showing how to work out an appropriate area from having divided the end into rectangles. A mark could also be given for 8×12 when it was clear that the candidate was partitioning the end shape into a large rectangle from which they intended to take a smaller rectangle, but this mark was not given when there was no evidence of work with compound shapes, as many candidates were just taking the figures 12 and 8 and multiplying. Some candidates lost marks by misjudging the dimensions of the rectangles they were using. It was not uncommon to find figures just multiplied or added at random. Many gained a mark in part (ii) for multiplying their answer in (i) by 10, irrespective of the value of their answer from (i). It was surprising to find candidates struggling with part (i), typically just multiplying all the numbers, then giving the correct answer to part (ii). Or vice versa.

Summary

Concluding guidance notes for centres:

- Figures need to be written clearly, and not over-written.
- Candidates need to ensure they copy figures accurately, either from the question, from their calculator, or from their own working.
- Candidates need to ensure they arrive to take the examination with all necessary equipment, which includes a calculator for Section A.
- Working needs to be presented legibly and in an organised way on the page, sufficient that the order of the process of solution is clear.
- Basic numeracy such as addition/subtraction needs practice.
- Times tables need to be learned.
- Candidates need to spend more time ensuring they read the fine detail of the question to avoid giving answers that do not answer the question, and to give answers in the form required, such as simplified if asked for.

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